Impact of Smart Instructional Strategies on Achievement Motivation of Elementary School Students

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Abstract- The present study deals with impact of smart instructional strategy on achievement motivation of elementary school students. The main objective of the study was to measure the impact of smart instructional strategies on the achievement motivation compared the traditional teaching method. It was also to find out significant differences on this psychological variable between high and low intelligence students. It was also the aim of study to establish the interactional impact of teaching strategies (smart instructional strategies and traditional teaching method) and intelligence on the variable of achievement motivation. To test hypothesis of the study, a sample of 90 students randomly from the Shivalik Public Sen. Sec. School, Shri Muktsar Sahib District of Punjab was selected. For conducting experiment the investigator has used two group randomized pre-test and post-test design. For collection of data the investigator has used the instructional and measuring tools. Instructional tools Smart instructional material (PPT), traditional method (Lesson plan) and Measuring tools: Intelligence by Raven's Progressive Matrices test (1989), achievement motivation by Pratibha Deo and Asha Mohan test (2002). The results of the study revealed that there was no significant difference between groups taught through Smart Instructional Strategies and Traditional Teaching Method on Pre-Test Scores on the variable achievement motivation (2) The smart instructional strategies students have higher mean score on post-test scores on the variable of achievement motivation as compared to students taught through traditional teaching method. (3) There was no significant interaction between teaching strategies and intelligence on the variable of achievement motivation. Teaching strategies and intelligence is insignificant at 0.05 level of confidence.

I. INTRODUCTION

Technology plays a vital role in education. In today's competitive world the child needs the skill sets, which are beyond subject knowledge and require concentration, assimilation power and achievement motivation. In this regard the role of smart instruction strategies are quite important. Smart instructional strategies are a smart concept for smart educators of smart schools. Smart instructional includes smart learning - techniques, smart classroom management, smart environment and smart learning materials. Smart instructional strategies are technique that uses a technology in the presentation of instructional material, often in a way that requires the students to interact with it. Husen and Postlethwaite (1990) instructional strategies are subsets of methods of instruction. Strategies are more global and encompassing. Teacher's concern about the selection of instructional strategies will influence the effectiveness, efficacy and appeal of instruction.

Motivation and learning are closely interwoven. All learning is purposeful and goal- directed. Therefore, motivation is an essential condition of learning. Emphasizing the importance of motivation in the learning process, according to Kelly (1956) "motivation is the central factor in the effective management of the process of learning. Some type of motivation must be present in all learning". It can be easily concluded that learning and motivation are closely related to each other and the effectiveness of a learning process, to a great extent, depends upon the level of motivation maintained by the learner in his learning.

Smart instructional strategy is that they enhance learner's motivation. Motivation is an important variable in education. When learners are motivated, the effect of learning is enhanced. For example, it is more interesting to fly a simulated airplane than it is to read about flying it. It provides dynamic, realistic situations that motivate learners to engage in active learning.

II. REVIEW OF RELATED LITERATURE

Balakrishnan and Velmurugan (2016) studied the achievement motivation of vocational stream higher secondary students. The study was conducted on a random sample of 600 students studying in Ariyalur and Perambalur districts in Tamil Nadu. The achievement motivation test constructed and validated by Gopal Rao (1974) was used to collect the data. Reveal that there is no significant difference among the higher secondary students in their achievement motivation.

Salmabegum (2016) examined the significance of smart class as a mode of teaching on student's performance in Bangalore. An experimental research was conducted on 114 students, where a 10 marks unit test had been designed

for a specified topic in social science subject and test was conducted after teaching a group of students using traditional method and other group of students using smart class.The study shows that smart class has significant impact in improving the performance of the students.

Satyanarayan and Hoovinabhavi (2016) found the relationship between achievement motivation and different styles of learning among university, Kalaburgi. The sample comprised 100 students of Gulbarga University Kalaburgi. The tools used were achievement motivation scale (1971) by PratibhaDeo and Asha Mohan to collect the data F-test is used and learning style inventory 1971 by K.S.Mishra. Students, and significance relationship is found in gender and locality in relation to learning styles and achievement motivation.

James Francis (2017) the effects of technology on student motivation and engagement in classroom-based learning. Research was completed at on urban charter school on a population of 348 at the time of technology intervention through data analysis. The results showed that students feel motivation through the specific use of technology in classroom.

Narasimhan,P. (2018) the study examined the relationship between self-concept, achievement motivation and academic stress among high school students. Data has been collected from 100 school students and adopted a survey method for this study. It was concluded that positive self-concept and achievement motivation create Eu-stress among students, enabling them to optimize their fullest potential.

2.1. Objectives of The Study

To develop instructional material for smart instructional strategies and conventional method in Hindi on specific topics for elementary students.

To study the interactional impact of instructions through smart instructional strategies on achievement motivation with respect to students belonging to different levels of Intelligence.

To find out the impact of smart instructional strategies and traditional strategies of elementary school students in Hindi.

2.2. Hypotheses of The Study

There will be no significant difference between on the mean post-test scores on achievement motivation of the students taught through smart instructional strategies and traditional method.

There will be no significant difference between on the mean post-test scores on achievement motivation of high and low intelligent students taught through smart instructional strategies and traditional method.

There will be no significant interactional between post-test score on teaching strategy and intelligence on the variable of achievement motivation.

2.3 Delimitations of The Study

The instructional material for smart instructional strategies and conventional method was developed on specific units for elementary students in Hindi.

The experiment was confined Hindi subject in Hindi medium students of elementary student.

The study was delimited to 90 students only.

The study was delimited to district Shri Muktsar Sahib only.

The study was delimited to 8th class.

2.4 Method And Procedure

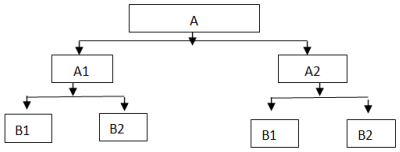
The present study was based on experimental method. In order to compare the impact of the methods of teaching, the pre-test, post-test design having experimental and control group was used.

III. DESIGN OF THE STUDY

The design of the present study was 2×2 analysis related with post-test score on achievement motivation.

DIAGRAMMATICAL PRESENTATION OF RESEARCH DESIGN

FACTORIAL DESIGN (POST-TEST)



School having smart instructional strategies in classroom facility
A1- Experimental group
A2- Controlled Group
B1-High Intelligence Level
B2- Low Intelligence Level

3.1 Variables
There are three variables in the present experimental study.
a. Independent variables
Instructions material through smart instructional strategies, traditional teaching method and intelligence.
b. Dependent variables
1. Achievement motivation.
c. Intervening variables
Following variables was intervening variables during the experiment i.e. fatigue, time-table schedule absence of the students, time gap within the treatment.

3.2 Sample of the study
In the present study sample of (N=90) students of elementary students was drawn from the different school of Shri Muktsar Sahib. The sample comprising of 90 students was randomly divided into two group- the experimental group and control group. In order to make equivalent groups, was work at the pre test and post-test stage of intelligence level for variable – variable of achievement motivation. The experiment group was taught with smart instructional strategies and control group was taught with traditional teaching method.

3.3 Tool to be used
In the present study two types of tool was used. These were ;
1. Instructional tools and
2. Measuring tools

3.3.1. Instructional tools
Instructional tools were used to impart instructions to the students and the investigator herself was developing these tools. These were;
Instructional material for smart instructional strategies (PPT)
Lesson plan for traditional teaching methods

3.3.2. Measuring tool
Achievement motivation by Pratibha Deo and Asha Mohan Test.(2002)

3.4 Procedure of experimentation
The experiment was conducted under three phases. In the first phases i.e. before being exposed to the teaching both the groups were pre-tested with test of achievement motivation and as well as intelligence test by using Raven's Progressive Matrix . During the second phases, the group design as experiment group was exposed to smart instructional strategies and the group designated as control group was taught through traditional teaching method. In third phases achievement motivation of the students of both treatment groups was measured as post-test.

3.5 Statistical techniques used
For significant F-ratio, t- tests were employed to find out the significance of difference between means related to achievement motivation among various groups.

IV. ANALYSIS AND RESULT

Table 1.1 Means, standard deviations and number of students on Post-Test of Achievement Motivation in teaching method and intelligence.
(2X2) (factorial design)

		Teaching Method		Total
		Smart Instructional Strategies	Traditional Teaching Method	
Intelligence	High	Mean = 165.62	Mean = 152.15	Mean = 158.88

		SD = 7392 N = 15	SD = 26.26 N = 15	SD = 20.21 N = 30
	Low	Mean = 153.62 SD = 10.09 N = 15	Mean = 147.07 SD = 15.71 N = 15	Mean = 150.34 SD = 13.36 N = 30
Total		Mean = 159.62 SD = 10.80 N = 30	Mean = 149.62 SD = 21.36 N = 30	Mean = 154.62 SD = 17.50 N = 60

Interpretation- It may be seen from table 1.1 that the mean scores of students on Achievement Motivation ranges from a low score of 147.07 in case of students of low intelligence group taught through traditional teaching method to high score of 165.62 in case of students of high intelligence group taught through smart instructional strategies. The mean scores and standard deviation of these 60 cases across Achievement Motivation are 38.58 and 8.36 respectively.

On the basis of above data, two way analysis of variance was carried out and the results are recorded in table 1.2

Table 1.2 Summary of 2 X 2 Analysis of Variance on Post Test Scores of Achievement Motivation in Relation to Teaching Strategies and Intelligence

Source of Variation	SS	df	MSS	F-Value
Main Effects A: Teaching Strategies B: Intelligence	 1300 947.77	 1 1	 1300 947.77	 4.72** 3.44NS
First Order Interaction A X B (Teaching Strategies x Intelligence)	155.77	1	155.77	0.57 NS
Within Group (Error)	13220.77	48	275.43	
Total	15624.31	51		

*Significant at 0.01 level of Confidence. **Significant at 0.05 level of Confidence.

F table (1, 48) at 0.01 and 0.05 level of significance is 7.19 and 4.04 respectively.

H1 There will be no significance difference between the mean post-test score on achievement motivation of the students taught through smart instructional strategies and traditional teaching method.

Interpretation

4.1. Main Effects

Main Effect A: Effect of Teaching Strategies (Smart Instructional Strategies and Traditional Teaching Method) on the variable of Achievement Motivation

Table 1.2 reveals that the F-ratio for the difference between mean post test scores on achievement motivation of the groups taught through Smart Instructional Strategies and Traditional Teaching Method came out to be 4.72 which is significant at the 0.05 level of confidence. It means that both the groups were significant difference the mean post test scores on the variable of Achievement motivation. Hence the null hypothesis H1 states that there will be no significance differences the mean post-test scores on Achievement motivation of groups taught through Smart Instructional Strategies and Traditional Method of Teaching is rejected. It may be inferred that the mean post test scores of groups taught through Smart Instructional Strategies and Traditional Method of Teaching may not be considered equal and are different beyond the contribution of chance.

From table 1.2, the means of the groups taught through Smart Instructional Strategies and traditional teaching method on the variable of achievement motivation were found to be 159.62 and 149.62 respectively. An examination of the means of two groups suggests that smart instructional strategies group has higher mean score on the variable of achievement motivation as compared to students taught through traditional teaching method. It reveals that the experimental group which had smart instructional strategies was more successful than the control group who had the instruction through traditional teaching method on the variable of achievement motivation.

H2 There will be no significance difference between the mean post-test scores on achievement motivation of high and low intelligence students taught through smart instructional strategies and traditional teaching method.

Main Effect B: Effect of Intelligence (High and Low) on the variable of Achievement

4.2 Motivation

Table 1.2 reveals that the F-ratio for the difference between mean post test scores on achievement motivation of the high and low intelligence groups came out to be 3.44 which is insignificant at the 0.05 level of confidence. It means that both the groups were not significantly different on the mean post test scores on the variable of Achievement motivation. Hence the null hypothesis H2 stating that there will be no significance differences the mean post-test scores on Achievement motivation of groups having high and low intelligence is accepted. It may be inferred that the mean post test scores of groups having high and low intelligence may be considered equal and are not different beyond the contribution of chance.

H3 There will be no significance interactional between post-test scores on teaching strategies and intelligence on the variable of achievement motivation.

Interactional Effect (A X B): Effect of Teaching Strategies and Intelligence on the variable of Achievement Motivation

Table 1.2 reveals that the F-ratio for the difference in mean post-test scores on the achievement motivation of students due to interaction between Teaching Strategies and Intelligence came out to be 0.57 which is insignificant at 0.05 level of confidence.

The results show that different groups did not score different mean post-test scores on achievement motivation for two types of instructional treatments and two levels of intelligence. It means that interaction of treatment strategy did not yield different mean scores on the achievement motivation for students with high and low levels of intelligence. Hence, the null hypothesis H3 stating that there will be no significance interaction between teaching strategies and intelligence on the variable of Achievement motivation is accepted.

It was concluded in the study that smart instructional strategies better than traditional teaching method yielded Achievement motivation. This finding was supported by Torff and Tirotta (2010) revealed that the students in the treatment group reported higher levels of motivation relative to control students. Charanjit and Nidhi (2014) revealed that achievement motivation is affected by school environment and is higher in boys as compared to girls and even in smart schools students as compared to conventional school.

In this study, achievement motivation of groups having high and low intelligence may be considered equal and no significant interaction is found between teaching strategies and intelligence on the variable of achievement motivation. This findings supported by Lakhi and Kaur (1995), Minnalkodi (1997), Umadevi (2009), Riffat, Ghazala and anjum (2011), Sidhu and Singh (2005) reveals that there is no significant difference among various teaching techniques, intelligence and achievement motivation on scholastic achievement of students in learning concepts in physics. Mishra and Jain (2013), Balakrishnan and Velmurugan (2016) revealed that there is no significant difference among the higher secondary students in their achievement motivation.

V. FINDING AND CONCLUSIONS RELATED TO ACHIEVEMENT MOTIVATION

1. The control and experimental group pre-test group students did not differ on their achievement motivation.
2. The error variance for variable of achievement motivation is equal in relation to teaching strategies and intelligence.
3. The control and experimental group post-test group students did differ on their achievement motivation.
4. The control group students did differ on their achievement motivation between pre-test (121.98) and post-test (149.62).
5. The experimental group students did differ on their achievement motivation between pre-test (124.48) and post-test (159.62).
6. The experimental group students did differ on their achievement motivation between high intelligence group (165.62) and low intelligence group (153.62).
7. Smart instruction strategies (mean 159.62) were better than traditional teaching method (mean 149.62) on their achievement motivation.
8. There was significant difference the mean post-test scores on achievement motivation of students taught through smart instructional strategies and traditional method of teaching. The smart instructional strategies students has higher mean score on the variable of achievement motivation as compared to students taught through traditional teaching method.
9. There was no significant difference the mean post-test scores on achievement motivation of students having high and low intelligence. The mean post-test scores of students having high and low intelligence may be considered equal.
10. There was no significant interaction between teaching strategies and intelligence on the variable of achievement motivation. Teaching strategies and intelligence is insignificant at 0.05 level of confidence.

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